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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,128	09/23/2003	Adrian Boariu	042933/302926	2874

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EXAMINER	
FILE, ERIN M	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/669,128	BOARIU ET AL.	
	Examiner	Art Unit	
	Erin M. File	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-20* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/1/2006 have been fully considered but they are not persuasive.

2. The Applicant contends:

> Claim 1 requires a radio communication system having a multiple-antenna transmitter that selectably transmits data at least from a first transmit antenna transducer and at least a second transmit antenna transducer for communication to a receiver, the data encoded at an encoder to include a systematic part and a non-systematic part, ... (remarks, p. 7, lines 23-27)
>
> In view of the foregoing, Das fails to teach or suggest at least a radio communication system having, inter alia, "a multiple-antenna transmitter that selectably transmits data, ... the data encoded at an encoder to include a systematic part and a non-systematic part ... (remarks, p. 8, lines 16-18)
>
> Das does not teach or suggest that the control and data signals disclosed therein correspond to "data encoded at an encoder to include a systematic part and non-systematic part," as required by claim 1 (remarks, p. 10, lines 1-3)

In response to applicant's arguments, the recitations above have not been given patentable weight because these recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

3. The Applicant contends:

> comprising, inter alia, "a determiner at least adapted to receive indications of channel conditions ..." and "a data assignor coupled to said determiner to receive indications of determinations made thereat." Further claim 1 recites that the "assignor for assigning the systematic part of the data encoded by the encoder to at least one of the first and at least second transmit antenna transducers [that] exhibits better channel qualities. (remarks, p. 7, line 27 – p. 8, line 4)
>
> data encoded at an encoder to include a systematic part and a non-systematic part ... a data assignor coupled to said determiner to receive indications of determinations made thereat, said assignor for assigning the systematic part of the data encoded by the encoder to at least one of the first and at least second transmit antenna transducers that exhibits better channel qualities," as claimed. In rejecting Claim 1, the Examiner alleges that the antenna weight generator 116 and scheduler 118 correspond to the claimed data assignor. (See pg. 2 of the Office Action where the Examiner alleges Das "discloses a data assignor (fig. 1, 116, 118)") (remarks, p. 8, lines 18-24)

The examiner contends that the systematic part of the data, which the specification of the instant application describes as informational content or non-parity bits. Das describes the data input (fig. 1, 114) as being data, not parity information, meeting the limitation of systematic data. These data are assigned to at least one of the two antennas 112_1 and 112_2, meeting the claimed limitation.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 4, 6, 7, 11, 14-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Das et al. (U.S. Patent Pub. No. 20030148770).

Claim 1, Das discloses a determiner (fig. 1, 119) at least adapted to receive indications of channel conditions of each channel (fig. 1, 126) upon which data is transmitted by each of the first and at least second transmit antenna transducers (fig. 1, feedback signals of 112_1,112_2) respectively, said determiner for determining at least relative channel qualities of each of the channels. Das further discloses a data assignor (fig. 1, 116, 118) coupled to said determiner to receive indications of determinations for assigning the encoded data to at least one of the first and at least second transmit antenna transducers.

Claim 4, the indications of the channel conditions (fig. 1, 126) to which said determiner (fig. 1, 119) is adapted to receive are provided to the transmitter (fig. 1, 114) by the receiver (fig. 1, 124, 129, Feedback Signal 134).

Claim 6, Das discloses that the invention may also include the data encoded by the encoder comprising a parity part assigned to encoded data of at least an other of the at least one of the first and at least second transmit antenna transducers ([0079]).

Claim 7, Das discloses that the weighting (or assigning) of the transmit antenna that the parity part of the data encoded by the data encoder is determined by channel qualities ([0079], 0080]).

Claim 11, Das discloses a determiner (fig. 1, 116) and said data assignor (fig. 1, 118) are embodied at the transmitter (fig. 1 110). Das further discloses a channel condition

detector for detecting the channel conditions of each of the channels upon which the data is transmitted (fig. 1, 126) coupled to a channel condition message generator (fig. 1, 129) for communication by the receiver (fig. 1, 120, 134) to the transmitter of detections made by said channel condition detector.

Claim 14, a base transceiver station (fig. 1, 120) operable in a cellular radio communication system and the receiver (fig. 1, 124) at which said channel condition detector (fig. 1, 126) and said channel condition message generator (fig. 1, 129) are embodied at a mobile station (fig. 1, 120) operable in the cellular radio communication system.

Claim 15, Das discloses determining at least relative channel qualities of each channel upon which data is transmitted by each of the first and at least second transmit antennas (fig. 1, 112_1,112_2) and assigning the data encoded by the encoder (fig. 1, 11) to at least one of the first and at least second transmit antennas (fig. 1, 112_1,112_2).

Claim 16, Das discloses the detecting channel conditions of each of the channels upon which the data is transmitted (fig. 1, 126) occurs before the operation of determining (fig. 1, 116, 118, 119), the at least the relative channel qualities determined during said operation of determining determined responsive to detections made during said operation of detecting (fig. 1, 126, 128, 134).

Claim 17, Das discloses operations of determining and assigning are performed at the transmitter (fig. 1, 116, 118) and wherein said operation of detecting is performed at the receiver (fig. 1, 124, 126).

Claim 18, Das discloses sending values representative of the channel conditions to the transmitter (fig. 1, output of 129, feedback signal).

Claim 19, Das discloses a feedback encoder (fig. 1, 129) which forms a message containing the values representative of the channel conditions (fig. 1, feedback signal) which is sent back to the transmitter ([0032]).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3, 12, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Das et al. (U.S. Patent Pub. No. 20030148770) as applied to claim 1 above, and further in view of Kuchi et al. (U.S. Patent No. 6,185,266).

Claims 3, 12, 20, Das fails to disclose communicated channel conditions includes energy levels of the received data, however, Kuchi discloses the channel conditions to which said determiner is adapted to receive comprise indications of aggregated energy levels of the data detected at the receiver (col. 7, lines 16-28). The energy of a received signal is well known as a measure of the channel conditions or channel qualities, and would therefore be obvious to one skilled in the art at the time of invention to incorporate the energy of detected data measurements as disclosed by Kuchi into the invention of Das.

8. Claims 2, 5, 9, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Das et al. (U.S. Patent Pub. No. 20030148770) as applied to claim 1 above, and further in view of Kim et al. (U.S. Patent No. 7,016,658).

Claim 2, Das fails to discloses the radio communication system comprises a multiple-input, multiple-output (MIMO) communication system, however, Kim discloses a multiple-input, multiple-output (col. 14, line 5). MIMO systems are well known in the art because of their advantage in exploiting phenomena such as multipath propagation to increase throughput. Because of this advantage, it would be obvious to one skilled in the art at the time of invention to incorporate Kim into Das.

Claim 5, Kim discloses the encoder at which the data is encoded comprises a turbo encoder (col. 3, lines 27-30). Kim further discloses that the channel encoding using the turbo encoder allows for performance closest to the Shannon limit (col. 3, lines 27-30). Because of this advantage it would be obvious to one skilled in the art at the time of invention to incorporate the turbo coding as disclosed by Kim into the invention of Das.

Claim 9, Kim further discloses a radio communication system comprises a cellular communication system operable generally pursuant to a cdma 2000 operating specification and that provides for 1xEV-DV data communications (col. 3, lines 30-32).

Claims 10, 13, Kim further discloses indications of the channel conditions comprise antenna index values (col. 15, lines 2-14).

Allowable Subject Matter

9. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File

EMF

10/13/2006

JAY K. PATEL
SUPERVISORY PATENT EXAMINER